

TRAINING SUPPORT PACKAGE (TSP)

TSP Number / Title	T226 / SUPERVISE THE IMPLEMENTATION OF PREVENTIVE MEDICINE POLICIES
Effective Date	03 Oct 2003
Supersedes TSP(s) / Lesson(s)	M202, Field Hygiene and Sanitation, NOV 99
TSP Users	400-PLDC Primary Leadership Development Course
Proponent	The proponent for this document is the Sergeants Major Academy.
Improvement Comments	<p>Users are invited to send comments and suggested improvements on DA Form 2028, <i>Recommended Changes to Publications and Blank Forms</i>. Completed forms, or equivalent response, will be mailed or attached to electronic e-mail and transmitted to:</p> <p>COMDT USASMA ATTN ATSS DCP BLDG 11291 BIGGS FIELD FORT BLISS TX 79918-8002</p> <p>Telephone (Comm) (915) 568-8875 Telephone (DSN) 978-8875 E-mail atss-dcd@bliss.army.mil</p>
Security Clearance / Access	Unclassified
Foreign Disclosure Restrictions	FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

PREFACE

Purpose

This Training Support Package provides the instructor with a standardized lesson plan for presenting instruction for:

Task Number

Task Title

Individual

081-831-1047

Supervise the Implementation of Preventive Medicine Policies

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SUPERVISE THE IMPLEMENTATION OF PREVENTIVE MEDICINE POLICIES
T226 / Version 1
03 Oct 2003

SECTION I. ADMINISTRATIVE DATA

All Courses Including This Lesson	<u>Course Number</u> 400-PLDC	<u>Version</u> 1	<u>Course Title</u> Primary Leadership Development Course								
Task(s) Taught(*) or Supported	<u>Task Number</u> <u>Individual</u> 081-831-1047 (*)	<u>Task Title</u> Supervise the Implementation of Preventive Medicine Policies									
Reinforced Task(s)	<u>Task Number</u>	<u>Task Title</u>									
Academic Hours	The academic hours required to teach this lesson are as follows:										
	<u>Resident Hours/Methods</u>										
	2 hrs / Conference / Discussion										
Test	0 hrs										
Test Review	0 hrs										
	Total Hours: 2 hrs										
Test Lesson Number	<u>Hours</u>		<u>Lesson No.</u>								
	Testing (to include test review) 2 hrs 30 mins		WE01								
Prerequisite Lesson(s)	<u>Lesson Number</u> None	<u>Lesson Title</u>									
Clearance Access	Security Level: Unclassified Requirements: There are no clearance or access requirements for the lesson.										
Foreign Disclosure Restrictions	FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.										
References	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 25%;"><u>Number</u></th> <th style="width: 35%;"><u>Title</u></th> <th style="width: 20%;"><u>Date</u></th> <th style="width: 20%;"><u>Additional Information</u></th> </tr> <tr> <td>FM 21-10</td> <td>FIELD HYGIENE AND SANITATION</td> <td>21 Jun 2000</td> <td></td> </tr> </table>			<u>Number</u>	<u>Title</u>	<u>Date</u>	<u>Additional Information</u>	FM 21-10	FIELD HYGIENE AND SANITATION	21 Jun 2000	
<u>Number</u>	<u>Title</u>	<u>Date</u>	<u>Additional Information</u>								
FM 21-10	FIELD HYGIENE AND SANITATION	21 Jun 2000									

Student Study Assignments

Before class—

- Read Student Handouts 1 and 2.

During class—

- Participate in classroom discussion.

After class—

- Review notes and lesson materials.

Instructor Requirements

1:8, SSG or SFC, PLDC graduate, ITC and SGITC qualified (SFC only used in the absence of an SSG and approved by the proponent commandant, or post commander).

Additional Support Personnel Requirements

Name

Stu Ratio

Qty

Man Hours

None

Equipment Required for Instruction

ID Name

Stu Ratio

Instr Ratio

Spt

Qty

Exp

441-06
LCD Projection System
559359
SCREEN PROJECTION
673000T101700
PROJECTOR, OVERHEAD, 3M
7110-00-132-6651
CHALKBOARD
7110-00-T81-1805
DRY ERASE BOARD

1:16

1:2

N

1

N

1:16

1:2

N

1

N

1:16

1:2

N

1

N

1:16

1:2

N

1

N

1:16

1:2

N

1

N

Materials Required**Instructor Materials:**

- VGTs-3
- TSP

Student Materials:

- Reading materials listed on the Advance Sheet.
- Pen or pencil and writing paper and any materials required by the NCOA's SOP.

Classroom, Training Area, and Range Requirements

CLASSROOM INSTRUCTION 900 SF, 16 PN or Classroom Conducive to Small Group Instruction of 16 Students.

**Ammunition
Requirements**

<u>Id</u>	<u>Name</u>	<u>Exp</u>	<u>Stu Ratio</u>	<u>Instr Ratio</u>	<u>Spt Qty</u>
None					

**Instructional
Guidance**

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

The SGL will--

- Read and study all TSP material and be ready to conduct the class.
- Conduct the class in accordance with this TSP.
- Collect all recoverable materials after the examination for this lesson.
- This TSP has questions throughout to check learning or generate discussion among the group members. You may add any questions you deem necessary to bring a point across to the group or expand on any matter discussed.

**Proponent
Lesson Plan
Approvals**

<u>Name</u>	<u>Rank</u>	<u>Position</u>	<u>Date</u>
/s/Santa Barbara, Robert GS-09		Training Specialist	
/s/Barnes, Ronnie G.	MSG	Course Chief, PLDC	
/s/Lawson, Brian H.	SGM	Chief, NCOES	
/s/Mays, Albert J.	SGM	Chief, DDD	

SECTION II. INTRODUCTION

Method of Instruction: <u>Conference / Discussion</u>
Technique of Delivery: <u>Small Group Instruction (SGI)</u>
Instructor to Student Ratio is: <u>1:8</u>
Time of Instruction: <u>5 mins</u>
Media: <u>None</u>

Motivator

One of your most important responsibilities as a leader is to train your subordinates in the medical threat and principles of preventive medicine measures. As noncommissioned officers, it is your responsibility to ensure that your soldiers remain healthy during field operations. You can do this by recognizing and enforcing proper field hygiene and sanitation procedures.

Terminal Learning Objective

NOTE: Inform the students of the following Terminal Learning Objective requirements. At the completion of this lesson, you [the student] will:

Action:	Determine leader preventive medicine measures.
Conditions:	In a classroom environment as a small unit leader responsible for 5 to 10 soldiers.
Standards:	Determined leader preventive medicine measures in accordance with FM 21-10 (SH-2).

Safety Requirements

None

Risk Assessment Level

Low

Environmental Considerations

NOTE: It is the responsibility of all soldiers and DA civilians to protect the environment from damage.

None

Evaluation

You will take a written examination. The examination will contain questions from this lesson. You must correctly answer 70 percent or more of the questions on the examination to receive a GO.

NOTE:

- Inform the students of where their examination will take place as posted on the training schedule and when they will receive feedback on the tests. Include any retest information.

-
- Inform the students that they must turn in all recoverable reference material after the examination.
-

**Instructional
Lead-In**

During this lesson, we will discuss the following medical threats--

- Heat.
- Cold.
- Arthropods and other animals.
- Food/waterborne diseases.
- Poisonous plants and toxic fruits.
- Noise.
- Toxic chemicals—non NBC.
- The unfit soldier.

Along with the medical threats, a major concern for leaders is the principles of preventive medicine measures (PMMs). The three major principles of PMM are--

- Soldiers perform individual principles of PMM.
- The chain of command plans for and enforces PMM.
- The field sanitation team trains soldiers in PMM and advises the commander on implementation of unit level PMM.

Our main focus will be on how the chain of command plans for and enforces PMMs. As a small unit leader, your knowledge of the medical threat and PMMs can play an important part in mission accomplishment.

SECTION III. PRESENTATION

NOTE: Inform the students of the Enabling Learning Objective requirements.

A. ENABLING LEARNING OBJECTIVE

ACTION:	Identify preventive medicine measures for heat injuries.
CONDITIONS:	In a classroom environment as a small unit leader responsible for 5 to 10 soldiers.
STANDARDS:	Identified preventive medicine measures for heat injuries IAW FM 21-10 (SH-2).

1. Learning Step / Activity 1. Preventive Medicine Measures (PMMs) for Heat Injuries

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 15 mins
Media: VGT-1

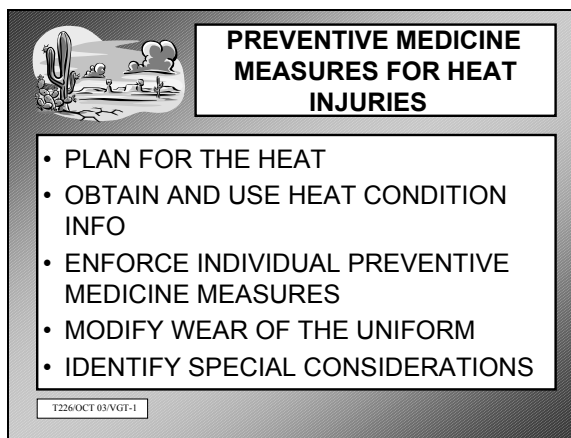
NOTE: Have the students open SH-2 to page SH-2-2. Inform the students to follow along in the student handout for this lesson.

Let's begin our discussion with leader's preventive medicine measures (PMMs) for heat injuries.

QUESTION: What are the leader's PMMs for heat injuries?

ANSWER: See VGT-1

SHOW VGT-1, PREVENTIVE MEDICINE MEASURES FOR HEAT INJURIES



Ref: SH-2, pp SH-2-4 thru SH-2-7 (FM 21-10)

The first thing you should do is plan for the heat. You should ask your unit field sanitation team (FST) to train you and your soldiers on the PMMs against heat.

Remember to acclimatize your newly assigned personnel gradually to high

temperatures as the mission permits. You can obtain the weather forecast for the time and area of your training or mission from the S-2 or the operation order. This will allow you to plan for the water intake your soldiers will need for the mission. As a rule of thumb, you should have up to three gallons of potable water per day per soldier just for drinking. Remember, personal hygiene also requires water, so plan ahead for that. If possible, issue a second canteen or more in hot weather and desert operations. Point out the location of all water distribution points on the map to **ALL** soldiers. Always have medical support for treatment of possible heat injuries. Position yourself to observe and react to heat injuries in dispersed training (road marches). If the mission permits, plan to train during the cooler morning hours and serve heavy meals in the evening, rather than at noon.

The next item is to obtain citrus fruit flavoring to encourage your soldiers to consume more water. Require your soldiers to drink water before starting any hard work or use the heat condition information. You should find heat condition information in your unit SOP. There are two ways to report heat condition: Category I, II, III, IV, and V and the Wet Bulb Globe Temperature Index (WBGT).

Use the heat condition information to determine the required water intake and work/rest cycles for your soldiers.

NOTE: Refer students to SH-2, p SH-2-5 and discuss the heat condition chart for no more than 2 minutes.

Remember, “rest” means to minimize physical activity. When at all possible, rest your soldiers in the shade and reduce physical training to lectures or demonstrations.

Next you must enforce individual preventive medicine measures. As leaders, you are to monitor your soldiers’ water intake by observing how much water they drink. You must encourage your soldiers to frequently drink water in small amounts. When possible, provide cool water and add mission in the morning (with or after meals). Frequently, check your soldiers’ canteens for water.

QUESTION: How can you reduce heat injuries?

ANSWER:

- By enforcing the work/rest cycles.
- By encouraging your soldiers to eat all meals so they will get the salt they need.
- By adjusting workloads to the ability of the individual.

Ref: SH-2, p SH-2-7 (FM 21-10)

As a leader, prepare yourself for heat casualties and decreased performance when you cannot meet water and work/rest cycle recommendations.

Remember, when the mission requires mission oriented protective posture (MOPP) or body armor, it will add 10 degrees to the measured wet bulb globe temperature (WBGT). As a result, you will need to enforce a higher water intake and modify the work/rest cycle. Watch your soldiers very closely for heat stress when they are operating in armored vehicles.

Next you must modify wear of the uniform. Have your soldiers keep all skin covered when in the sun. Allow them to loosen their uniform around the neck, wrists, and lower legs (unblouse pants). If the medical threat from biting insects is high, keep sleeves rolled down and pants bloused in boots. You must identify and modify training and physical activities for soldiers who have a high-risk condition for heat injuries.

QUESTION: What are some high-risk conditions?

ANSWER:

- Diseases/injuries.
- Recent (within 24 hours) use of alcohol.
- Overweight/unfit.
- Over 40 years old.
- Fatigue/lack of sleep.
- Taking medication.
- Previous heatstroke/severe heat exhaustion.
- Lack of recent experience in a hot climate.

Ref: SH-2, p SH-2-7 (FM 21-10)

REMOVE VGT-1

B. ENABLING LEARNING OBJECTIVE

ACTION:	Identify preventive medicine measures for cold injuries.
CONDITIONS:	In a classroom environment as a small unit leader responsible for 5 to 10 soldiers.
STANDARDS:	Identified preventive medicine measures for cold injuries IAW FM 21-10 (SH-2).

1. Learning Step / Activity 1. Preventive Medicine Measures for Cold Injuries

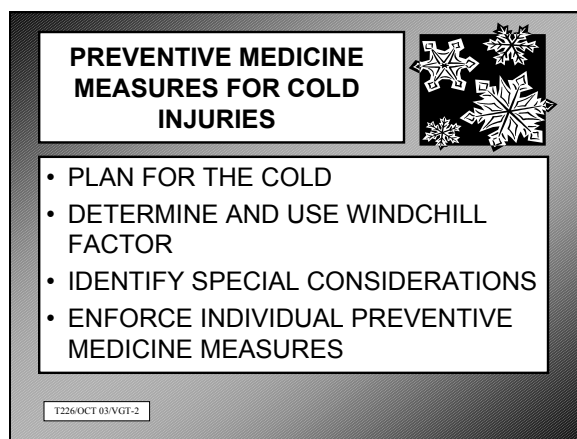
Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 15 mins
Media: VGT-2

Now, let's discuss the PMMs for cold injuries that you and your soldiers should use when operating in a cold weather environment.

QUESTION: What are the PMMs for cold injuries?

ANSWER: See VGT-2.

SHOW VGT-2, PREVENTIVE MEDICINE MEASURES FOR COLD INJURIES



Ref: SH-2, pp SH-2-8 thru SH-2-11 (FM 21-10)

The first item is the same as for heat injuries except that you must plan for the cold. You should ask your unit field sanitation team to train you and your soldiers against cold injuries. You can obtain the weather forecast for the time and area of your training or mission from the S-2 or the operation order. When the tactical situation permits, you should have available--

- Covered vehicles for troop transport.

- Cold weather clothing.
- Laundry services.
- Warming tents/areas.
- Hot rations/hot beverages.
- Drinking water.

Before starting any training or mission, you must inspect your soldiers' cold weather gear to ensure they have their allowance, that it fits properly and that it is serviceable. You must ensure each soldier has at least five pairs of socks. When your soldiers are performing guard duty or inactive duties, frequently rotate them to prevent cold weather injuries. Inform your soldiers where they can get medical support for cold weather injuries.

QUESTION: What is the wind chill index?

ANSWER: The equivalent temperature of the cooling power of wind on exposed flesh.

Ref: SH-2, p SH-2-9 (FM 21-10)

Your knowledge of the cold weather condition and wind speed will help plan for your mission and prevent cold injuries. You should use the wind chill chart to calculate the chill temperature and perform the PMMs to prevent cold injuries to your soldiers.

NOTE: Refer the students to SH-2-8 thru SH-2-10, and then discuss the wind chill chart and PMMs for no more than 5 minutes.

Remember, the wind chill index gives the equivalent temperature of the cooling power of wind on exposed flesh. Any movement of the air, such as running, riding in open vehicles, and helicopter blades rotating, has the same effect as the wind. For example, your tank company has a tactical roadmarch on the training schedule today. The road march speed is 15 miles per hour and the temperature is zero degrees.

QUESTION: What is the chill temperature for the road march?

ANSWER: -32 degrees.

Ref: SH-2, p SH-2-9 (FM 21-10)

The windchill chart indicates that exposed skin can freeze within one minute at

–32 degrees. You would require your soldiers to put on their mittens, scarves, and facemasks to cover all exposed skin. You must pay special attention for trench foot injuries, because they can occur at any point on the wind chill chart. Trench foot is more likely to occur than frostbite at “little danger” wind chill temperatures, especially on extended exercises or missions and in wet environments.

You must identify and modify training/physical activity for soldiers who have a high-risk condition for cold injuries. Your major consideration should be for soldiers with high risk conditions such as--

- Previous trench foot or frostbite.
- Fatigue.
- Use of alcohol.
- Significant injuries.
- Poor nutrition.
- The use of medication that causes drowsiness.
- Little previous experience in cold weather.
- Immobilized or subject to greatly reduced activity.
- Use of tobacco products.

Remember, soldiers are always looking for a place to get warm in cold weather so pay special attention to sources of carbon monoxide poisoning and fires. Ensure windows and hatches are open in vehicles with heaters and place fire extinguishers near heaters.

As leaders, you must require your soldiers to wear clean and dry uniforms in loose layers. Watch to make sure soldiers remove their outer layer(s) before starting hard work or when in heated areas (before sweating). Have your soldiers inspect their socks and feet at least daily when operating in cold or wet environments.

As a leader, you should spot check your soldiers to ensure they are taking proper care of their feet. To reduce cold weather injuries, you should ensure your soldiers--

- Wash their feet daily.
- Wear clean and dry socks.
- Use warming areas when available.
- Eat all meals.
- Drink plenty of water or nonalcoholic fluids.
- Exercise their large muscle groups, toes, feet, fingers, and hands to keep warm.

Just as in hot weather, it is important that your soldiers consume adequate amounts of water to prevent dehydration. A buddy system in cold weather will help your soldiers take care of each other and decrease cold weather injuries and combat stress.

REMOVE VGT-2

CHECK ON LEARNING:

QUESTION: What are some ways to protect soldiers against cold weather injuries?

ANSWER: Covered vehicles for troop transport, cold weather clothing, laundry services, warming tents/areas, and hot rations/hot beverages.

Ref: SH-2, p SH-2-8 (FM 21-10)

QUESTION: What is the wind chill index?

ANSWER: The equivalent temperature of the cooling power of wind on exposed flesh.

Ref: SH-2, p SH-2-10 (FM 21-10)

C. ENABLING LEARNING OBJECTIVE

ACTION:	Identify preventive medicine techniques against arthropods and animals.
CONDITIONS:	In a classroom environment as a small unit leader responsible for 5 to 10 soldiers.
STANDARDS:	Identified preventive medicine techniques against arthropods and animals IAW FM 21-10 (SH-2).

1. Learning Step / Activity 1. Preventive Medicine Techniques Against Arthropods and Animals

Method of Instruction: Conference / Discussion
 Technique of Delivery: Small Group Instruction (SGI)
 Instructor to Student Ratio: 1:8
 Time of Instruction: 10 mins
 Media: None

NOTE: Have the students go to SH-2, p SH-2-11. Inform the students to follow along during this lesson.

Next, let's discuss the threats that arthropods and other animals impose on you and your soldiers when operating in any environment. It's your job to obtain information on biting and stinging arthropods and other animals that will be in your area of operation.

QUESTION: Where do you obtain information on arthropods and other animals?

ANSWER: The unit medical channels from the command preventive medicine representative and the health service support annex to the operation order/plan.

Ref: SH-2, p SH-2-11 (FM 21-10)

After finding the information about your area of operation, ask your unit field sanitation team (FST) to teach your soldiers PMMs for arthropods and other animals. The FST has the mission of controlling insects and other medically hazardous arthropods in your area of operation. Be sure you have field sanitation supplies and equipment on hand for your mission. Keep your soldiers from handling insects, arthropods, and snakes to prevent bites, stings, and spread of disease. To prevent attracting insects, do not permit personnel to eat in sleep or work areas. Do not allow mascots in sleep or work areas unless permitted by veterinary personnel.

QUESTION: What is some equipment your soldiers should have before going into an area with arthropods and other animals?

ANSWER: Each soldier should have a bed net in good repair and his immunizations should be current.

Ref: SH-2, p SH-2-12 (FM 21-10)

When your unit cannot control the biting insects in your area of operation, you should inform the FST. The FST will request assistance from a preventive medicine unit.

QUESTION: What are the PMMs for arthropods and other animals?

ANSWER: Direct soldiers to keep shirts buttoned, sleeves down, and pants bloused inside boots; ensure soldiers bathe or shower regularly, do not use colognes or after shave lotions, wear clean uniforms, and use bed nets, and aerosol insect spray bombs.

Ref: SH-2, p SH-2-12 (FM 21-10)

You must ensure your soldiers are performing PMMs correctly. You may search your area of operation and get rid of animals which may bite or otherwise cause injury or disease. If your mission permits--

- Ask your FST to assist you in selecting bivouac sites.
- Occupy areas away from breeding areas such as bodies of water.
- Avoid areas with high grass or dense vegetation.

- Use FST recommendations and assistance in applying pesticides for area control around living areas and in permanent standing water areas.
- Drain or fill temporary standing water sites in occupied area such as empty cans, used tires, or wheel ruts.
- Clear vegetation from around occupied areas.

Ref: SH-2, p SH-2-13 (FM 21-10)

You must sanitize your area by getting rid of rodents—rats and mice which carry fleas. You can accomplish this by burying all waste, protecting food supplies, and policing the area regularly. These are good sanitation practices that will also reduce populations of flies that live in filth.

CHECK ON LEARNING:

QUESTION: What is some equipment your soldiers should have before going into an area with arthropods and other animals?

ANSWER: Each soldier should have a bed net in good repair and his immunizations should be current.

Ref: SH-2, p SH-2-12 (FM 21-10)

D. ENABLING LEARNING OBJECTIVE

ACTION:	Identify preventive medicine techniques against poisonous plants and toxic fruits.
CONDITIONS:	In a classroom environment as a small unit leader responsible for 5 to 10 soldiers.
STANDARDS:	Identified preventive medicine techniques against poisonous plants and toxic fruits IAW FM 21-10 (SH-2).

1. Learning Step / Activity 1. Preventive Medicine Techniques Against Poisonous Plants and Toxic Fruits

Method of Instruction: Conference / Discussion
 Technique of Delivery: Small Group Instruction (SGI)
 Instructor to Student Ratio: 1:8
 Time of Instruction: 5 mins
 Media: None

Now, let's discuss PMMs for poisonous plants and toxic fruits that you and your soldiers may find when operating in any environment. You can obtain information on poisonous plants and toxic fruits from unit medical channels and the medical annex to the operation order/plan.

QUESTION: What are the PMMs for poisonous plants and toxic fruits?

ANSWER: Properly wear the uniform, avoid poisonous plants where possible, avoid the consumption of potentially dangerous vegetation and fruits, and avoid putting grasses and twigs in the mouth.

Ref: SH-2, p SH-2-14 (FM 21-10)

BREAK TIME: 00:50 to 1:00

CHECK ON LEARNING: Included in ELO 5.

E. ENABLING LEARNING OBJECTIVE

ACTION:	Identify preventive medicine techniques against food and waterborne disease and illness.
CONDITIONS:	In a classroom environment as a small unit leader responsible for 5 to 10 soldiers.
STANDARDS:	Identified preventive medicine techniques against food and waterborne disease and illness IAW FM 21-10 (SH-2).

1. Learning Step / Activity 1. Preventive Medicine Techniques Against Food and Waterborne Disease and Illness

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 10 mins
Media: None

Next, let's discuss PMMs for food and waterborne diseases and illnesses that you and your soldiers may encounter. You can obtain information on the location of approved water distribution points from the medical annex to operation order/plan. Ensure all of your soldiers know the location of these points. Make sure your squad/team/section has an adequate supply of--

- Iodine water purification tablets.
- Chlorination kits.
- Bulk chlorine.

Ref: SH-2, p SH-2-15 (FM 21-10)

You should ask your unit FST to inspect the water containers of your unit, such as unit water trailers, lyster bags, and water cans before you use them. Have the FST check the residual chlorine of water supplies before you permit soldiers to drink the water and at least daily after that.

You should ask your unit FST to ensure that food service personnel maintain food at safe temperatures. Have the FST inspect food service personnel daily for illness or skin infections. The FST ensures that food service personnel bury or burn all food waste daily. Food service personnel should bury this waste at least 30 meters from the food preparation area and water source.

Ref: SH-2, p SH-2-15 (FM 21-10)

Your main responsibility in planning for safe food is to keep civilian vendors out of your area unless the medical authority has given the vendors permission to sell food to your soldiers. Supervise your soldiers when they clean their mess kits and correct any shortcomings on the spot. You must ensure soldiers use hand washing facilities to clean their hands.

The FST is responsible for selecting a location and constructing and maintaining latrines. The latrines should be 100 meters or more downwind from food operations and 30 meters or more down slope from any water source. The FST will spray the latrines with insecticide as necessary; they do not spray the pit contents. The FST will provide hand washing facilities at the latrines.

Remember, you should detail your soldiers to construct and maintain field sanitation devices and to cover, burn, or bury waste daily.

Ref: SH-2, p SH-2-16 (FM 21-10)

CHECK ON LEARNING:

QUESTION: How far should food waste be buried or burned from food preparation areas and water sources?

ANSWER: At least 30 meters.

REF: SH-2, p SH-2-15 (FM 21-10)

QUESTION: How far should you place field latrines from food operations?

ANSWER: 100 meters downwind.

REF: SH-2, p SH-2-16 (FM 21-10)

QUESTION: What are the PMMs for poisonous plants and toxic fruits?

ANSWER: Properly wear the uniform, avoid poisonous plants where possible, avoid the consumption of potentially dangerous vegetation and fruits, and avoid putting grasses and twigs in the mouth.

REF: SH-2, p SH-2-14 (FM 21-10)

F. ENABLING LEARNING OBJECTIVE

ACTION:	Identify preventive medicine techniques against noise hazards.
CONDITIONS:	In a classroom environment as a small unit leader responsible for 5 to 10 soldiers.
STANDARDS:	Identified preventive medicine techniques against noise hazards IAW FM 21-10 (SH-2).

1. Learning Step / Activity 1. Preventive Medicine Techniques Against Noise Hazards

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 10 mins
Media: None

Now, lets discuss PMMs for noise that you and your soldiers may encounter when operating in most environments. As a leader, you have the responsibility to identify hazardous noise in your unit.

If necessary, request preventive medicine assistance in identifying sources. You should have all of your soldiers medically fitted for hearing protectors and have your soldiers' hearing checked annually by medical personnel.

QUESTION: How can you control or reduce noise levels in your unit area?

ANSWER: Isolate by distance, isolate by barriers, and use organic equipment controls.

Ref: SH-2, p SH-2-19 (FM 21-10)

You should plan and conduct training in a high-noise environment to evaluate your soldiers' ability to perform their missions while wearing hearing protectors.

QUESTION: What can you do to reduce the effects of noise on your soldiers?

ANSWER: Ensure your soldiers--

- Wear earplugs.
- Do not remove inserts from aircraft helmets.
- Avoid unnecessary exposure.

- Limit necessary exposure to short periods of time.
- Clean hearing protectors.

Ref: SH-2, p SH-2-19 (FM 21-10)

You must know the short-term noise effects on your soldiers' ability to hear combat significant noise. This allows you to know which soldiers can or cannot man a listening or observation post in a combat situation.

Ref: SH-2, p SH-2-19 (FM 21-10)

CHECK ON LEARNING: Included in ELO 8.

G. ENABLING LEARNING OBJECTIVE

ACTION:	Identify preventive medicine measures for toxic chemicals (non-NBC).
CONDITIONS:	In a classroom environment as a small unit leader responsible for 5 to 10 soldiers.
STANDARDS:	Identified preventive medicine techniques for toxic chemicals (non NBC) IAW FM 21-10 (SH-2).

1. Learning Step / Activity 1. Preventive Medicine Techniques for Toxic Chemicals (Non-NBC)

Method of Instruction: Conference / Discussion
 Technique of Delivery: Small Group Instruction (SGI)
 Instructor to Student Ratio: 1:8
 Time of Instruction: 10 mins
 Media: None

Next, let's discuss the non-NBC toxic chemicals that you and your soldiers may encounter when operating in any environment. As a leader, you have the responsibility to identify existing toxic chemicals in your unit. If necessary, request preventive medicine assistance in identifying toxic chemicals and their sources. Ask the preventive medicine assistance team to help you obtain safer chemicals for the unit.

QUESTION: What individual measures should you require your soldiers to observe to avoid toxic chemicals in your area?

ANSWER: Ensure that soldiers--

- Tune engines outside or vent engine exhaust to the outside.
- Keep their sleeping quarters ventilated.

- Do not use vehicle engines as heaters.
- Use/maintain on-board ventilation systems.
- Train to self-protect themselves around hydrogen chloride.
- Maintain bore/gun gas evacuation systems.
- Use “safety” Stoddard solvent.
- Have adequate clean gloves, coveralls, and other protective gear.
- Follow label instructions on chemical containers.

Ref: SH-2, p SH-2-20 (FM 21-10)

CHECK ON LEARNING: Included in ELO 8.

H. ENABLING LEARNING OBJECTIVE

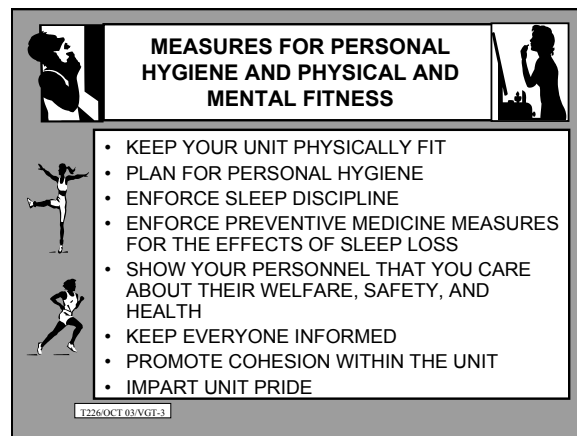
ACTION:	Monitor soldiers' personal hygiene and physical and mental fitness.
CONDITIONS:	In a classroom environment as a small unit leader responsible for 5 to 10 soldiers.
STANDARDS:	Monitored soldiers' personal hygiene and physical and mental fitness IAW FM 21-10 (SH-2).

1. Learning Step / Activity 1. Monitor Soldiers' Personal Hygiene and Physical and Mental Fitness

Method of Instruction: Conference / Discussion
 Technique of Delivery: Small Group Instruction (SGI)
 Instructor to Student Ratio: 1:8
 Time of Instruction: 15 mins
 Media: VGT-3

Let's discuss the PMMs for personal hygiene and physical and mental fitness that you and your soldiers should observe when operating in any environment.

SHOW VGT-3, MEASURES FOR PERSONAL HYGIENE AND PHYSICAL AND MENTAL FITNESS



Ref: SH-2, pp SH-2-17 thru SH-2-19 (FM 21-10)

You must keep your unit physically fit. The physical fitness of your soldiers is one of the most important factors to prevent combat losses from disease or injury. You as a leader must be a role model in physical fitness and lead by example. You must take a positive approach to physical fitness and get your soldiers to do likewise. You must plan time for personal hygiene. Your higher command is responsible for providing showers or bathing facilities in any environment. You must ensure each of your soldiers bathes at least once a week and changes clothing frequently. This will reduce the health hazard associated with body lice.

Ask your FST to train your soldiers in personal hygiene. Remember, it's also your responsibility to ensure your soldiers receive annual dental examinations and that they attend treatment appointments.

Your mission, unit readiness, and individual security must come first, but never miss a chance to give someone time to sleep. You must establish a sleep plan for your soldiers based on the mission. When feasible, set work and rest shifts to give everyone 6-9 hours of sleep per 24 hours. During "continuous operations," set shifts and rotate jobs to allow everyone at least 3-4 hours of uninterrupted sleep per 24-hour period. You and your soldiers should use catnaps during sustained operations. Be sure you mark all sleeping areas when in a bivouac area and use ground guides for all vehicles entering and departing the area. Remember, leaders need sleep also because the loss of sleep reduces their performance and decision-making ability.

As leaders, you have complex mental and decision-making jobs and need adequate sleep. In order to have time to sleep, you need to cross train your soldiers to perform your critical tasks in your absence. Never think you are the only one that can get the job done. Plan and conduct training that requires the loss of sleep, and practice the individual techniques for counteracting the effects of sleep loss.

QUESTION: What are some of the ways you can show your soldiers you care for their welfare, safety, and health?

ANSWER:

- Provide the best/safest water, food, equipment, shelter, sanitation, and sleep possible under the circumstances of the mission.

- Educate them to maintain themselves, each other, and their equipment. Know their backgrounds, and chat with them informally about themselves. Be attentive and understanding while listening to them.
- Mobilize group support or counseling on available social service resources for them regarding “home front” problems.
- Assign jobs to maintain qualified people at key positions while sharing the load, hardship, and risks fairly.
- Share the discomforts and risks with your soldiers. Seek out challenging and difficult environments in training to increase your own and your soldiers’ coping skills and confidence.

Ref: SH-2, p SH-2-18 (FM 21-10)

If you take care of your soldiers, they will have confidence in you and will follow you in any mission. Remember, a team can accomplish more than an individual.

Brief your soldiers on the complete situation, objectives, and conditions that the mission or environment may involve. Explain reasons for hardships, delays, and any changes. Don’t give false reassurances. Prepare your soldiers for the worst and put any unexpected challenges or reversals in a positive perspective. Deal with rumors firmly and honestly and prevent rumors from spreading. Always make contingency plans and follow your SOPs to reduce the harmful effects of surprise. You must also promote cohesion within the unit.

QUESTION: How can you promote cohesion among your soldiers?

ANSWER:

- Use equipment drills, physical fitness exercises, team sports, and “stress training.”
- Use meals, award ceremonies, and other occasions to bring them closer together.
- Encourage unit-centered social interaction outside duty hours.
- Integrate new members by assigning sponsors and ensuring rapid familiarization.

Ref: SH-2, p SH-2-18 (FM 21-10)

The last item is to impart unit pride. You can instill unit pride in your soldiers by educating them in the unit history, tradition of the small unit, its parent units, their branch of service, and the Army. You can do this by finding articles of historical examples of initiative, endurance, and resilience, of overcoming heavy odds, and of self-sacrifice and reading them to your soldiers at each muster formation. This will help your soldiers build pride in the unit and have an attitude of wanting to be a part of the unit.

REMOVE VGT-3

CHECK ON LEARNING:

QUESTION: How can you control or reduce noise levels in your unit area?

ANSWER: Isolate by distance, isolate by barriers, and use organic equipment controls.

Ref: SH-2, p SH-2-19 (FM 21-10)

QUESTION: What can you do to reduce the effects of noise on your soldiers?

ANSWER: Ensure your soldiers--

- Wear earplugs.
- Do not remove inserts from aircraft helmets.
- Avoid unnecessary exposure.
- Limit necessary exposure to short periods of time.
- Clean hearing protectors.

Ref: SH-2, p SH-2-19 (FM 21-10)

QUESTION: What individual measures should you require your soldiers to observe to avoid toxic chemicals in your area?

ANSWER: Ensure that soldiers--

- Tune engines outside or vent engine exhaust to the outside.
- Keep their sleeping quarters ventilated.
- Do not use vehicle engines as heaters.
- Use/maintain on-board ventilation systems.
- Train to self-protect themselves around hydrogen chloride.
- Maintain bore/gun gas evacuation systems.
- Use "safety" Stoddard solvent.
- Have adequate clean gloves, coveralls, and other protective gear.
- Follow label instructions on chemical containers.

Ref: SH-2, p SH-2-20 (FM 21-10)

QUESTION: How can you promote cohesion among your soldiers?

ANSWER: Use equipment drills, physical fitness exercises, team sports, and "stress training"; use meals, award ceremonies, and other occasions to bring them closer together, encourage unit-centered social interaction outside duty hours; integrate new members by assigning sponsors and ensuring rapid familiarization.

Ref: SH-2, p SH-2-18 (FM 21-10)

SECTION IV. SUMMARY

Method of Instruction: <u>Conference / Discussion</u>
Technique of Delivery: <u>Small Group Instruction (SGI)</u>
Instructor to Student Ratio is: <u>1:8</u>
Time of Instruction: <u>5 mins</u>
Media: <u>None</u>

Check on Learning

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review / Summarize Lesson

One of the most important responsibilities as a leader is to train your subordinates in the medical threat and principles of preventive medicine measures. You may have to place their lives in danger someday to accomplish a combat mission. There is no excuse for needlessly jeopardizing the lives and health of your soldiers during peacetime or wartime. If you allow your soldiers to neglect field sanitation procedures, you are, in effect, placing their lives and health in danger.

SECTION V. STUDENT EVALUATION

Testing Requirements

NOTE: Describe how the student must demonstrate accomplishment of the TLO. Refer student to the Student Evaluation Plan.

You will receive a written examination. You must correctly answer 70% of the questions or more to receive a GO.

Feedback Requirements

NOTE: Feedback is essential to effective learning. Schedule and provide feedback on the evaluation and any information to help answer students' questions about the test. Provide remedial training as needed.

NOTE: Inform the students of where the examination will take place as posted on the training schedule and when they will receive feedback on the test. Include any retest information. Inform the students that they must turn in all recoverable reference material after the examination.

Enabling Learning Objective A

Learning Step 1

VGT-1, Preventive Medicine Measures for Heat Injuries

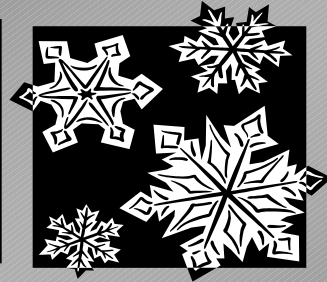


PREVENTIVE MEDICINE MEASURES FOR HEAT INJURIES

- PLAN FOR THE HEAT
- OBTAIN AND USE HEAT CONDITION INFO
- ENFORCE INDIVIDUAL PREVENTIVE MEDICINE MEASURES
- MODIFY WEAR OF THE UNIFORM
- IDENTIFY SPECIAL CONSIDERATIONS


T226/OCT 03/VGT-1

PREVENTIVE MEDICINE MEASURES FOR COLD INJURIES






- PLAN FOR THE COLD
- DETERMINE AND USE WINDCHILL FACTOR
- IDENTIFY SPECIAL CONSIDERATIONS
- ENFORCE INDIVIDUAL PREVENTIVE MEDICINE MEASURES

T226/OCT 03/VGT-2



MEASURES FOR PERSONAL HYGIENE AND PHYSICAL AND MENTAL FITNESS





- KEEP YOUR UNIT PHYSICALLY FIT
- PLAN FOR PERSONAL HYGIENE
- ENFORCE SLEEP DISCIPLINE
- ENFORCE PREVENTIVE MEDICINE MEASURES FOR THE EFFECTS OF SLEEP LOSS
- SHOW YOUR PERSONNEL THAT YOU CARE ABOUT THEIR WELFARE, SAFETY, AND HEALTH
- KEEP EVERYONE INFORMED
- PROMOTE COHESION WITHIN THE UNIT
- IMPART UNIT PRIDE

T226/OCT 03/VGT-3

Appendix B Test(s) and Test Solution(s) (N/A)

Appendix C Practical Exercises and Solutions (N/A)

HANDOUTS FOR LESSON: T226 version 1

This appendix contains the items listed in this table---

Title/Synopsis	Pages
SH-1, Advance Sheet	SH-1-1 thru SH-1-2
SH-2, Extract from FM 21-10	SH-2-1 thru SH-2-20

Student Handout 1

This student handout contains the Advance Sheet.

Student Handout 1

Advance Sheet

Lesson Hours

This lesson consists of two hours of small group instruction.

Overview

This lesson teaches you some of the most important aspects of training your subordinates in the medical threat and principles of preventive medicine measures. As noncommissioned officers, it is your responsibility to ensure that your soldiers remain healthy during field operations. You can do this by recognizing and enforcing proper field hygiene and sanitation procedures.

Learning Objective

Terminal Learning Objective (TLO).

Action:	Determine leader preventive medicine measures.
Conditions:	In a classroom environment, as a small unit leader responsible for 5 to 10 soldiers.
Standard:	Determined leader preventive medicine measures IAW FM 21-10 (SH-2).

- ELO A** Identify preventive medicine measures for heat injuries.
- ELO B** Identify preventive medicine measures for cold injuries
- ELO C** Identify preventive medicine techniques against arthropods and animals
- ELO D** Identify preventive medicine techniques against poisonous plants and toxic fruits
- ELO E** Identify preventive medicine techniques against food and waterborne disease and illness.
- ELO F** Identify preventive medicine techniques against noise hazards.
- ELO G** Identify preventive medicine measures for toxic chemicals (non-NBC).
- ELO H** Monitor soldiers' personal hygiene and physical and mental fitness.

Assignment

- Read Student Handouts 1 and 2.
- Participate in classroom discussion.
- Review notes and lesson materials.

Additional Subject Area Resources

None

Bring to Class

- Student Handouts 1 and 2.
- Pencil or pen and writing paper

Student Handout 2

This student handout contains 19 pages of extracted material from FM 21-10.

CHAPTER 2

INDIVIDUAL PREVENTIVE MEDICINE MEASURES

Section I. HEAT INJURIES

OVERVIEW

Heat injuries can occur anywhere, depending on physical activity (work rate) and clothing worn. However, they occur most frequently during warm-weather training, exposure to high climatic temperatures, high humidity, and bright sunlight. These conditions make it difficult for the body to regulate its temperature. Hot weather also increases daily water requirements, because body water is lost as sweat. Dehydration leads to added heat stress, increased susceptibility to heat injury, reduced work performance, and degraded mission capability.

ACCLIMATIZATION

When the mission permits, all personnel should work and exercise in a manner so that they gradually become acclimatized to the heat and humidity in the AO. Significant heat 3 to 5 days and full acclimatization can take up to 2 weeks. Exercising in the heat and humidity for 1 to 2 hours daily, gradually increasing the workload each day, can produce acclimatization. (Refer to Table 3-1 in Chapter 3.) When the mission does not permit time for gradual increases in workload, then leaders and buddies must observe each other and ensure that everyone drinks plenty of water during each work period. Individuals leaving a cold or cool climate will require additional time to become acclimatized to a hot climate.

DRINK PLENTY OF WATER

Depending on the heat and activity level, you may need to drink from $\frac{1}{2}$ to $1\frac{1}{4}$ quarts of water per hour, *3 gallons/12 liters per day in hot, dry climates*. **Drinking water is a must in order to prevent heat injury.** If desired, individuals may add flavoring to the water to enhance consumption. Field rations/meal(s), ready to eat (MRE) have flavoring for water in each meal. If the flavoring is used, add it to water in your canteen cup. **Do not** add flavoring to the water in your canteen; it increases the risk of contamination and illness. Never flavor the bulk source water supply. (Flavoring the bulk source water supply will reduce the action of water disinfectants.) See Table 3-1 for water intake requirements.

- Drink extra water **before** starting any mission or hard work. Cool water (60° to 70° Fahrenheit [F]) is absorbed faster than cold water.
- Drink small quantities of cool fluids frequently. Carbohydrate/electrolyte beverages (sport drinks) may provide supplemental nutrients under conditions of extreme calorie and water requirements; such as extremely vigorous activity. However, they cannot replace and must not be used to meet all water requirements.
- Drink non-caffeinated fluids even if you are not thirsty. (Caffeine increases water requirements in all environments.)
- Refill your canteens at every opportunity, using only treated water, if possible.

NOTE

The color and volume of the urine stream are good indicators of a service member's hydration status. If your urine stream is **dark yellow** and the volume is small, or if you are constipated and experience hard stools, you may not be drinking enough water. Maintain a urine stream that is **clear or light yellow**. Thirst is not a good indicator of dehydration during physical activity.

USE WORK/REST CYCLES

- Work and rest as your leader directs. (See Table 3-1.) A rest period helps prevent dangerous increases in body temperatures by minimizing heat production.
- Work and rest in the shade, if possible.

CHAPTER 3

LEADERS' PREVENTIVE MEDICINE MEASURES

NOTE: In addition to the specific measures that follow, leaders must remember and apply the principle that the most effective PMM they can apply is to visibly set the example in the use of all the individual PMM that are discussed throughout this FM.

Section I. HEAT INJURIES

PLAN FOR THE HEAT

- Maximize physical fitness and heat acclimatization before deployment.
- Use your FST to train individuals and their leaders in PMM against heat.
- Acclimatize personnel to high temperatures as gradually as the mission will allow.
- Brief service members on dangers of sunburn and skin rashes and the importance of good personal field hygiene.
- Obtain weather forecast for time/area of training/mission.
- Ensure adequate supplies of potable water are available (up to 3 gallons per day per service member just for drinking) (See Table 3-1). Issue a second canteen to service members in hot weather operations. In the desert, additional canteens may be required.
- Know the location of water distribution points.
- Set up a buddy system to maximize rehydration and minimize heat injuries.
- Ensure medical support is available for treatment of heat injuries.
- Plan the placement of leaders to observe for and react to heat injuries in dispersed training (road marches), or operational missions.
- If the mission permits, plan to--
 - Train during the cooler morning hours.
 - Serve heavy meals in the evening, rather than at noon.

OBTAIN AND USE HEAT CONDITION INFORMATION

- Obtain heat condition information per your unit's SOP or contact the local supporting PVNTMED detachment or section. Heat condition may be reported as--
 - Category: 1, 2, 3, 4, and/or 5.
 - Wet bulb globe temperature (WBGT) index.
- Use heat condition information to determine required water intake and work/rest cycles (Table 3-1).

NOTE: Training by lecture or demonstration, maintenance procedures on equipment, or personal hygiene activities (such as skin and foot care) can be performed during rest periods.

**Table 3-1. Fluid Replacement Guidelines for Warm Weather Training
(Applies to Average Acclimated Service Member Wearing Hot Weather Uniform)**

HEAT CATEGORY	WBGT INDEX DEGREES F	EASY WORK		MODERATE WORK		HARD WORK	
		WORK/ REST MIN	WATER INTAKE QT/HR	WORK/ REST MIN	WATER INTAKE QT/HR	WORK/ REST MIN	WATER INTAKE QT/HR
1	78-81.9	NL	1/2	NL	3/4	40/20	3/4
2 (GREEN)	82-84.9	NL	1/2	50/10	3/4	30/30	1
3 (YELLOW)	85-87.9	NL	3/4	40/20	3/4	3/30	1
4 (RED)	88-89.9	NL	3/4	30/30	3/4	20/40	1
5 (BLACK)	>90	50/10	1	20/40	1	10/50	1

The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specified heat category. Individual water needs will vary \pm 1/4 quart/hour.

NL= no limit to work time per hour.

Rest means minimal physical activity (sitting or standing) accomplished in shade, if possible.

CAUTION: Hourly fluid intake should not exceed 11/4 quarts.

Daily fluid intake **should not exceed 12 liters.**

Wearing body armor adds **5° F** to WBGT Index.

Wearing all MOPP overgarments adds **10° F** to WBGT Index.

Table 3-1. Fluid Replacement Guidelines for Warm Weather Training (Continued)
(Applies to Average Acclimated Service Member Wearing Hot Weather Uniform)

EASY WORK	MODERATE WORK	HARD WORK
WEAPON MAINTENANCE	WALKING LOOSE SAND AT 2.5 MPH, NO LOAD	WALKING HARD SURFACE AT 3.5 MPH, \geq 40 LB LOAD
WALKING HARD SURFACE AT 2.5 MPH, \leq 30 LB LOAD	WALKING HARD SURFACE AT 3.5 MPH, \leq 40 LB LOAD	WALKING ON LOOSE SAND AT 2.5 MPH WITH LOAD
GUARD DUTY	CALISTHENICS	FIELD ASSAULTS
MARKSMANSHIP TRAINING	PATROLLING	
DRILL AND CEREMONY	INDIVIDUAL MOVEMENT TECHNIQUES, SUCH AS LOW CRAWL, HIGH CRAWL	
	DEFENSIVE POSITION CONSTRUCTION	

WARNING

Hourly fluid intake should not exceed 1 $\frac{1}{4}$ quarts. Daily fluid intake should not exceed 12 liters.

ENFORCE INDIVIDUAL PREVENTIVE MEDICINE MEASURES

Leaders must--

- Enforce water intake by—
 - Observing service members drinking required amounts. Encourage frequent drinking of water in small amounts.
 - Ensuring that service members practice good field hygiene.
 - Providing cool water; if desired, you can add flavoring after disinfection to enhance consumption. Personnel should use their canteen cup for consumption of flavored water. **DO NOT add flavoring to canteen water; use only plain water in canteen.**
 - Ensuring troops drink water before starting any hard work or mission (in the morning, with/after meals).
 - Ensuring buddy system is being used.
 - Frequently checking service members' canteens for water; not beverages.

- Making sure service members have adequate time to eat and drink as mission permits. Permit personnel to consume carbohydrate/electrolyte beverages (sports drinks) as

supplemental nutrients under conditions of extreme calorie and water requirements; such as extremely vigorous activities.

- Reduce heat injuries by—
 - Enforcing work/rest cycles when the mission permits. Permitting personnel to work/rest in the shade, if possible.
 - Encouraging service members to eat all meals for needed salts.
 - Adjusting workload to size of individuals, when possible.
 - Be prepared for heat casualties and decreased performance when water and work/rest cycle recommendations cannot be met.

MODIFY WEAR OF THE UNIFORM

Direct/authorize service members to—

- Keep skin covered while in sun.
- Keep uniform loose at neck, wrists, and lower legs (unblouse pants).

NOTE: If the medical threat from biting arthropods is high, keep sleeves rolled down and pants bloused in boots.

IDENTIFY SPECIAL CONSIDERATIONS

Identify and modify training/physical activity for service members with high-risk conditions of heat injuries, such as—

- Diseases/injuries, especially fevers, vomiting, diarrhea, heat rash, or sunburn.
- Use of alcohol within the last 24 hours.
- Overweight/unfit.
- Over 40 years old.
- Fatigue/lack of sleep.
- Taking medication (especially for high blood pressure, colds, or diarrhea).
- Previous heatstroke/severe heat exhaustion.
- Lack of recent experience in a hot environment.

Section II. COLD INJURIES

PLAN FOR THE COLD

- Use your FST to train individuals and their leaders in PMM against cold.
- Obtain weather forecast for time/area of training/mission.
- Ensure the following are available as the tactical situation permits:
 - Covered vehicles for troop transport, if tactical situation permits.
 - Cold weather clothing.
 - Laundry services.
 - Warming tents/areas.
 - Hot rations/hot beverages.
 - Drinking water.
- Inspect service members (before starting training/mission) to ensure—
 - Availability, proper fit, and wear of cold weather gear.
 - Clean, dry, proper-fitting clothing.
 - Each service member has several pairs of socks, depending on the nature and duration of the mission.
 - Frequently rotate guards or other service members performing inactive duties.
 - Ensure medical support is available for treatment should cold weather injuries occur.

DETERMINE AND USE WINDCHILL FACTOR

- Obtain temperature and wind speed information as directed by your units SOP or contact the local supporting PVNTMED detachment or section.
- Calculate windchill from Table 3-2.

NOTE: Cold injuries can and do occur in nonfreezing temperatures. Hypothermia can occur in mildly cool weather.

Table 3-2. Windchill Chart

ESTIMATED WIND SPEED (IN MPH)	ACTUAL TEMPERATURE READING (°F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
EQUIVALENT CHILL TEMPERATURE (°F)												
CALM	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	18	8	-5	-15	-25	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-45	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
(WIND SPEEDS GREATER THAN 40 MPH HAVE LITTLE ADDITIONAL EFFECT.)	LITTLE DANGER IN LESS THAN ONE HOUR WITH DRY SKIN. MAXIMUM DANGER OF FALSE SENSE OF SECURITY.						INCREASING DANGER DANGER FROM FREEZING OF EXPOSED FLESH WITHIN ONE MINUTE.			GREAT DANGER FLESH MAY FREEZE WITHIN 30 SECONDS.		
	NOTE: 1. TRENCH FOOT AND IMMERSION FOOT MAY OCCUR AT ANY POINT ON THIS CHART. 2. F = 9/5 C + 32.											

Table 3-3. Windchill Categories (See Windchill Table)

WORK INTENSITY	LITTLE DANGER	INCREASED DANGER	GREAT DANGER
HIGH DIGGING FOXHOLE, RUNNING, MARCHING WITH RUCKSACK, MAKING OR BREAKING BIVOUAC	INDIVIDUALS OR SMALL UNIT LEADERS: BLACK GLOVES OPTIONAL; MANDATORY BELOW 0 DEGREES F; INCREASED HYDRATION.	INCREASED SURVEILLANCE BY EXTREME COLD WEATHER SYSTEM OR EQUIVALENT; MITTENS WITH LINERS; NO FACIAL CAMOUFLAGE; EXPOSED SKIN COVERED AND KEPT DRY; REST IN WARM, DRY, SHELTERED AREA; COLD WEATHER, VAPOR BARRIER BOOTS BELOW 0 DEGREES F.	POSTPONE NON- ESSENTIAL ACTIVITY; ESSENTIAL TASKS ONLY WITH LESS THAN 15 MINUTES EXPOSURE; COVER ALL SKIN.
LOW WALKING, MARCHING WITHOUT RUCKSACK, DRILL AND CEREMONY	INCREASED SURVEILLANCE; COVER EXPOSED FLESH WHEN POSSIBLE; MITTENS WITH LINERS AND NO FACIAL CAMOUFLAGE BELOW 10 DEGREES F; FULL HEAD COVER BELOW 0 DEGREES F; KEEP SKIN DRY, ESPECIALLY AROUND NOSE AND MOUTH.	RESTRICT NONESSENTIAL ACTIVITY; 30-40 MINUTE WORK CYCLES WITH FREQUENT SUPERVISORY SURVEILLANCE FOR ESSENTIAL TASKS (SEE ABOVE).	CANCEL OUTDOOR ACTIVITY, IF POSSIBLE.
SEDENTARY SENTRY DUTY, EATING, RESTING, SLEEPING, CLERICAL WORK	SEE ABOVE; FULL HEAD COVER AND NO FACIAL CAMOUFLAGE BELOW 10 DEGREES F; COLD WEATHER, VAPOR BARRIER BOOTS BELOW 0 DEGREES F; SHORTEN DUTY CYCLES; PROVIDE WARMING.	POSTPONE NONESSENTIAL ACTIVITY; 15-20 MINUTE WORK CYCLES FOR ESSENTIAL TASKS; WORK GROUPS OF NO LESS THAN 2 PERSONNEL; NO EXPOSED SKIN.	CANCEL OUTDOOR ACTIVITY, IF POSSIBLE.

These guidelines are generalized for worldwide use. Commanders of units with extensive extreme cold weather training and specialized equipment may opt to use less conservative guidelines.

- Then use Table 3-4 to apply PMM guidance:

Table 3-4. Windchill Preventive Medicine Measures

WINDCHILL	PREVENTIVE MEDICINE MEASURES
30° F AND BELOW	ALERT PERSONNEL TO THE POTENTIAL FOR COLD INJURIES.
25° F AND BELOW	LEADERS INSPECT PERSONNEL FOR WEAR OF COLD WEATHER CLOTHING. PROVIDE WARM-UP TENTS/AREAS/HOT BEVERAGES.
0° F AND BELOW	LEADERS INSPECT PERSONNEL FOR COLD INJURIES. INCREASE THE FREQUENCY OF GUARD ROTATIONS TO WARMING AREAS. DISCOURAGE SMOKING.
-10° F AND BELOW	INITIATE THE BUDDY SYSTEM-HAVE PERSONNEL CHECK EACH OTHER FOR COLD INJURIES.
-20° F AND BELOW	MODIFY OR CURTAIL ALL BUT MISSION-ESSENTIAL FIELD OPERATIONS.

- The windchill index gives the equivalent temperature of the cooling power of wind on exposed flesh.
 - Any movement of air has the same effect as wind (running, riding in open vehicles, or helicopter downwash).
 - Any dry clothing (mittens, scarves, masks) or material which reduces wind exposure will help protect the covered skin.
- Trench foot injuries can occur at any point on the windchill chart and—
 - Are much more likely to occur than frostbite at “LITTLE DANGER” windchill temperatures, especially on extended exercises/missions and/or in wet environments.
 - Can lead to permanent disability, just like frostbite.

IDENTIFY SPECIAL CONSIDERATIONS

- Conditions that place service members at high risk of cold injuries include--
 - Previous trench foot or frostbite.
 - Fatigue.
 - Use of alcohol.

- Significant injuries.
- Poor nutrition.
- Use of medications that cause drowsiness.
- Little previous experience in cold weather.
- Immobilized or subject to greatly reduced activity.
- Service members wearing wet clothing.
- Sleep deprivation.
- Identify the special hazards of carbon monoxide poisoning and fire that may affect your cold weather operations.

ENFORCE INDIVIDUAL PREVENTIVE MEDICINE MEASURES

- Ensure service members wear clean and dry uniforms in loose layers.
- Ensure service members remove outer layer(s) before starting hard work or when in heated areas (before sweating).
- Have service members inspect their socks and feet at least daily when operating in cold and/or wet environments.
- Ensure service members to--
 - Wash their feet daily.
 - Wear clean and dry socks.
 - Use warming areas when available.
 - Eat all meals to ensure sufficient calories are consumed to maintain body heat.
 - Drink plenty of water and/or nonalcoholic fluids. In cold weather, fluid intake is often neglected, leading to dehydration.
 - Exercise their big muscles or at least their toes, feet, fingers, and hands to keep warm.
- Institute the buddy system in cold weather operations. Service members taking care of each other decrease cold injuries.

Section III. ARTHROPODS AND OTHER ANIMALS OF MEDICAL IMPORTANCE

PLAN FOR THE ARTHROPOD, RODENT, AND OTHER ANIMAL THREAT

- Obtain information on biting and stinging arthropods and other animals (such as snakes, domestic and wild animals, or birds) which could be a threat—
 - Through unit medical channels from the command PVNTMED representative.
 - From the health service support (HSS) annex to operation plan/order.
- Use your FST--
 - Train your service members in PMM.
 - Control insects and other medically important arthropods in your AO.
 - Control rodents and other medically important animals in your AO.
 - Remind service members to avoid handling insects, arthropods, snakes, and other animals to prevent bites or injury. Animals that appear to be healthy may

- transmit rabies and other zoonotic diseases.
 - Keep personnel from eating in sleeping/work areas; prevent attracting insects, rodents, and other animals.
 - Animal mascots should not be kept or maintained unless cleared by veterinary personnel.
- Ensure that--
 - Each service member has a bed net in good repair and treated with permethrin repellent.
 - Immunizations are current. Prophylaxis (for example, anti-malaria tablets) is available for issue as required.
 - Laundry and bathing facilities are available.
 - Field sanitation team supplies and equipment are available and can be replenished.
- Request assistance from a PVNTMED unit (through medical or command channels) when control of biting arthropods, rodents, or other animals is beyond the capabilities of your unit.

ENFORCE INDIVIDUAL PREVENTIVE MEDICINE MEASURES

- Ensure all uniforms are impregnated with permethrin before field training or deployment.
 - Ensure each service member has DOD skin (DEET) and clothing (permethrin) insect repellent and uses them. However, cooks, other food handlers, and kitchen police personnel must not use repellent on their hands when preparing and serving food, or when cleaning food service utensils, dishes, and food serving areas.
- Direct service members to keep--
 - Shirts buttoned.
 - Sleeves rolled down.
 - Pants bloused inside boots.
- Ensure service members--
 - Bathe/shower regularly (field expedients will do); a field shower or bath with a clean change of uniform should be accomplished once each week to control body lice.
 - Discontinue the use of aftershave lotions, colognes, perfumes, and scented soaps; they attract insects.
 - Use permethrin treated bed nets and the DOD-approved aerosol insect (Insecticide, d-Phenothrin, 2%, Aerosol, NSN 6840-01-412-4634); spray inside the net if necessary.
 - Observe service members taking anti-malaria pills or other prophylaxis (when prescribed by the medics).
 - Use your FST to identify suspected lice infestations and refer for medical treatment.

MINIMIZE EXPOSURE TO ARTHROPOD, RODENT, AND ANIMAL THREAT

- If the mission permits--
 - Use your FST to assist you in selecting bivouac sites.
 - Occupy areas distant from insect/arthropod breeding areas such as natural bodies of water.
 - Avoid areas with high grass or dense vegetation.
 - Use FST recommendations and assistance in applying pesticides for area control around living areas and in natural bodies of water.
 - Drain or fill in temporary standing water sites in occupied area (empty cans, used tires, or wheel ruts after rains).
 - Clear vegetation in and around occupied area.
- Maintain area sanitation by enforcing good sanitation practices.
 - Properly dispose of all waste.
 - Protect all food supplies.
 - Police area regularly.
 - Exclude pests (rats, mice, lice, and flies).

NOTE: See Appendix A for performance of tasks relating to PMM against arthropods and rodents.

Section IV. POISONOUS PLANTS AND TOXIC FRUITS

- Obtain information on poisonous plants and toxic fruits that could be a threat—
 - Through unit medical channels from the command PVNTMED representative.
 - From the HSS annex to operation plan/order.
- Use your FST to--
 - Train your service members in PMM.
 - Display and provide information on the kinds of dangerous plants and fruits in the unit area.
- Enforce individual PMM by--
 - Proper wearing of the uniform.
 - Avoidance of poisonous plants where possible.
 - Avoidance of consuming potentially dangerous vegetation and fruits.
 - Avoidance of putting grasses and twigs in the mouth.

Section V. FOOD-/WATER-/WASTEBORNE DISEASE/ILLNESS

PLAN FOR SAFE WATER

- Know the location of approved water distribution points.
- Make sure your unit has an adequate supply of—
 - Iodine water purification tablets (1 bottle for each individual).
 - Field chlorination kits.
 - Bulk chlorine.
 - Chlor-FlocÆ kits.
- Ensure water trailers and tankers (400 gallon and above) are inspected by PVNTMED personnel semiannually.
- Inspect water containers before use.
- Check the residual chlorine of bulk water supplies (5-gallon cans, water pillows, water trailer) before drinking and at least daily thereafter. (See Tasks 7 and 8, Appendix A.)

PLAN FOR SAFE FOOD

- Ensure food service personnel maintain foods at safe temperatures.
- Inspect food service personnel daily and refer for medical evaluation those with illness and/or skin infections.
- Make sure foods, drinks, and ice purchased from civilian vendors are approved by the command medical authority.
- Supervise the use of the mess kit laundry/sanitation center.
- Ensure food service personnel and service members use handwashing devices.
- Ensure all food waste is transported to an approved disposal site, buried, or burned daily (at least 30 meters from food preparation area and water source).

PLAN FOR THE CONSTRUCTION AND MAINTENANCE OF FIELD SANITATION DEVICES

- Determine type of field waste disposal devices required.
 - The primary type of human waste disposal devices in bivouac areas are the chemical toilets. Individual waste collection bags are the primary type used when on the march.
 - The type of improvised waste disposal used will depend on the mission, length of stay in the area, terrain, and weather conditions. When chemical toilets are not available, the burn-out latrine is the preferred improvised waste disposal device.

NOTE: Always check local, state, federal, or host-nation regulations for restrictions or prohibitions on using standard or improvised field devices and waste disposal in the field.

- Select locations for field latrines.
 - As far from food operations as possible (100 meters or more). Downwind and down slope, if possible.
 - Down slope from wells, springs, streams, and other water sources (30 meters or more).
 - Set up, construct, and maintain latrines (see Task 9, Appendix A, for requirements).
 - As soon as the unit moves into a new area, detail service members to set up chemical toilets or dig latrines. (See previous **NOTE**.)
 - Detail service members to clean latrines daily.
 - Instruct the FST to spray the latrines with insecticide as necessary (not the pit contents).
 - Always provide handwashing facilities at the food service facilities and the latrines. Make use of handwashing devices at latrines mandatory.
 - Cover, transport, burn, or bury waste daily.
 - Use the FST to train service members and unit leaders in PMM against food-/water-/wasteborne diseases.

NOTE: See Appendix A for performance of tasks relating to PMM against food-/water-/wasteborne diseases.

Section VI. PERSONAL HYGIENE AND PHYSICAL AND MENTAL FITNESS

KEEP YOUR UNIT PHYSICALLY FIT

- Ensure that leaders at all levels recognize the benefits of physical fitness. Leaders must be role models, leading by example.
- Take a positive approach to physical fitness with service members. A physically fit service member is less likely to be a combat loss from disease or injury.

NOTE: See FM 21-20 for more information.

PLAN FOR PERSONAL HYGIENE

- Provide shower/bathing facilities in the field. All personnel must bathe at least once a week and have a clean change of clothing to reduce the health hazard associated with body lice.
- Inspect service members' personal equipment to ensure they have sufficient personal hygiene supplies—soap, washcloths, towels, a toothbrush, dental floss, fluoride toothpaste, and razor and razor blades (females should have sanitary napkins or tampons).
- Ensure undergarments are cotton (not silk, nylon, or polyester).
- Ensure uniforms fit properly (not tight).
- Ensure service members have several pairs of issue boot socks; the number will depend on the type and length of the mission.
- Use your FST to train your service members in personal hygiene.
- Ensure service members receive annual dental examinations and needed oral health care. Make sure all oral health appointments are kept. Use low operational requirement periods to ensure all personnel maintain a good oral health status.

ENFORCE SLEEP DISCIPLINE

- The mission, unit readiness, and individual security must come first, but never miss a chance to give everyone in the unit time to sleep.
- When feasible, set work/rest shifts.
- Do not allow service members to sleep in areas where they may be run over by vehicles, or in other unsafe areas.
- During *continuous operations*, set shifts and rotate jobs to allow everyone at least 3 to 4 hours uninterrupted sleep per 24-hour period.
- During brief (up to 48 hours) sustained operations when shifts are impossible, rotate jobs so all individuals catnap as safely and comfortably as possible. The loss of sleep will reduce the service member's ability to perform his duties and the leader's ability to make decisions.

NOTE: Ensure that sleeping individuals observe safety precautions. Use ground guides for vehicles in bivouac areas.

ENFORCE PREVENTIVE MEDICINE MEASURES FOR THE EFFECTS OF SLEEP LOSS

- Those individuals with the most complex mental or decision-making jobs need the most sleep. This means you and your most critical leaders and operators!
- Cross train individuals to perform the critical tasks and delegate limited authority among leaders, thus enabling all to get necessary rest.

ENSURE WELFARE, SAFETY, AND HEALTH OF UNIT

- Ensure the best and safest water, food, equipment, shelter, sanitation, and sleep possible are provided.
- Educate service members to maintain professional pride and personal caring for themselves, each other, and their equipment.
- Know the personal backgrounds and the military skills of your service members. Chat with them informally about themselves. Be attentive and understanding while listening to service members.
- Utilize group support and counsel for service members with *home front* problems.
- Assign jobs to maintain a balance between having qualified people in key positions while sharing the load, hardship, and risks fairly.
- Use challenging and difficult environments during training to increase your own and the unit's coping skills and confidence.

REDUCE UNCERTAINTY BY KEEPING EVERYONE INFORMED

- Brief unit personnel on the situation, objectives, and conditions that the mission or environment may involve.
- Explain reasons for hardships, delays, and changes.
- Do not give false reassurances. Prepare your service members for the worst and put any unexpected challenges or reversals in a positive perspective.
- Deal with rumors firmly and honestly. Prevent the spread of rumors.
- Make contingency plans and follow SOP to reduce the effects of surprise.

PROMOTE COHESION WITHIN THE UNIT

- Use equipment drills, physical fitness training, team sports, and field *stress training* to stimulate mutual reliance and closeness.
- Bring unit members together for meals, award ceremonies, and other special occasions.
- Integrate new members by assigning sponsors and ensuring rapid familiarization.

IMPART UNIT PRIDE

- Educate service members in the history and tradition of the small unit, its parent units, and the branch of Service.
- Honor the historical examples of initiative, endurance, and resilience, of overcoming heavy odds, and of self-sacrifice.

Section VII. NOISE

PLAN FOR NOISE

- Identify existing noise in your unit, If Identify existing noise in your unit. If necessary, request PVNTMED assistance in identifying sources.
- Ensure that hearing conservation is part of the unit SOP.
- Ensure all service members are medically fitted for hearing protectors and are issued multiple sets.
- Ensure all service members have annual hearing test/screening.
 - Control noise sources.
 - Isolate by distance; that is, keep troops away from noise, if possible.
 - Isolate by barrier; for example, use sandbags.
 - Use organic equipment controls; for example, keep mufflers and engine covers in good repair.
- Train unit to do mission while wearing hearing protectors.
- Post **Noise Hazard** signs in noise hazardous areas and on noise hazardous equipment.

ENFORCE INDIVIDUAL PROTECTIVE MEASURES

Ensure that service members—

- Wear earplugs or other hearing protective devices.
- Do not remove inserts from aircraft or tracked vehicle helmets.
- Avoid unnecessary exposure.
- Limit necessary exposure to short, infrequent, mission-essential times.
- Clean their hearing protectors.

PROTECT MISSION

- Be aware of short-term noise effects on the service member's ability to hear combat significant noise.
- Assign listening post (LP)/observation post (OP) to troops least affected by noise, augment LP/OP with night vision devices and/or increase the number of audible alarms around your position.

Section VIII. TOXIC INDUSTRIAL CHEMICALS/MATERIALS

PLAN FOR CHEMICALS

- Identify sources of toxic industrial chemicals/materials in your unit. If necessary, request PVNTMED assistance in identifying sources.
- Obtain safer chemicals for unit operations, if available.
- Observe cautions/warnings posted in technical manuals dealing with solvents corrosives, and other hazardous materials. (Refer to MSDS that accompany stores of toxic chemicals/materials.)

ENFORCE INDIVIDUAL PREVENTIVE MEDICINE MEASURES

Ensure that service members—

- Repair engines outside or vent engine exhaust to outside.
- Keep their sleeping quarters ventilated.
- Do not use vehicle engines as heaters.
- Use/maintain onboard ventilation systems.
- Are trained and drilled to self-protect themselves around hydrogen chloride and M8 smoke.
- Maintain bore/gun gas evacuation systems.
- Use “safety” Stoddard solvent.
- Have adequate clean gloves, coveralls, and other protective gear.
- Follow label instructions on chemical containers.